



## Strategising in a regional innovation system perspective

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# Strategising in a regional innovation system perspective

Presentation at SAP meeting 26 September 2008

*Per Dannemand Andersen and Birgitte Rasmussen, DTU Management*

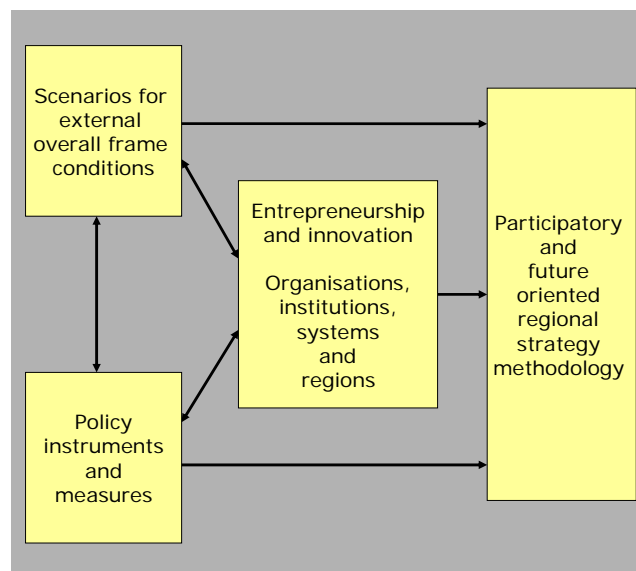
## feat2015 - scope, result and approach

### *Scope*

The pivotal point of our project is food and agricultural production at the sectoral level with special emphasis on frame conditions, policy instruments and innovation patterns. We focus on how knowledge and learning gained from sectoral innovation patterns and value chains can be combined and interact with regional strengths and competences in order to support concrete innovation processes creating innovation of the food and agricultural sector as well as regional development.

### *Approach*

The feat2015 is genuinely cross disciplinary as it draws on two academic traditions: regional innovation systems (RIS) and regional foresight (RF). Further it includes experiences from different types of policy measures and instruments. The project approach is illustrated in the diagram.



### *Result*

Participatory and future oriented regional strategy methodology addressing regional trade development through innovation based on competences and experiences in the food and agricultural sector combined with scenarios for external overall frame conditions and policy instruments.

## Theoretical background

### *Regional innovation systems and regional foresight*

Regional innovations systems (Asheim, Cooke, Braczyk, Maskell) origin in the established industrial economics' analytical approach to innovation systems (Freeman, Lundvall, Edquist, Archibugi) and in considerations on user-producer interactions (von Hippel, Lundvall). RIS can be seen as an adaption of national innovation theories to the regional level. The field includes different theoretical approaches each of one defining different aspects of regional innovation systems, for example: scope and extent (Lundvall, Edquist), structure and institutions (Lundvall), activities (Edquist), learning (Asheim, Coenen & Vang), relations and clusters (Martin & Sunley), sectoral variances (Asheim & Gertler, Vang).

Foresight is not yet established as a traditional academic discipline. Foresight is an emerging field of practice. It is generally acknowledged that the theoretical rationale for foresight exercises is supported by the perspective (or school) of evolutionary economics (Georghiou & Keenan, 2006). Concerns and processes for strategically to deal with the futures of science, technology and business development have been around for several decades (Kahn & Wiener, 1967; Helmer, 1967; Jantsch, 1967; Martino, 1983). Especially, in Europe foresight has increasingly been used in national science, technology and innovation policy (Martin&Irvine, 1989; Martin, 1995; Grupp&Linstone, 1999). A new wave of application oriented theory and methodology literature is presently on its way based on these European experiences from national foresights from early 1990s and until today. This new wave is based – among others – on ‘the new science’ (Gibbons et al, 1994; Fuller 2000; Leydesdorff&Etzkowitz, 1998, Nowotny et al, 2001), on other perspectives than the linear models for innovation – i.e. network perspectives (Bower&Star, 1996; Callon, 1997), and on learning perspectives (Nonaka, 1994 ; Tsoukas, 1996). As RIS can be seen as an adaption of national innovation theories to the regional level Regional Foresight (RF) is often defined as the implementation of foresight approaches to anticipation, participation, networking, vision & action at smaller territorial scales – which means that proximity factors become more critical (FOREN; FOR-RIS; Keenan et al. 2002).

Whereas the rationale for regional foresight and regional innovation policy gets its legitimacy from the tradition of evolutionary economics, the methods and approaches used in foresight activities have their basis in the traditions of strategic management. Foresight methods such as trend extrapolation, scenarios, Delphi analysis, focus groups, cross-impact analyses, road mapping and so on, can be found in traditional business-school textbooks on strategy. Many of these methods were developed between the 1940s and 1970s, often in the USA and often in affiliation with defence-related analyses or strategic intelligence in large firms. Several foresight methods (such as Delphi analysis) assume the relationship between research and innovation to be linear, whereby innovation is thought to be initiated in pure science and to trickle down through applied research and industrial development, ending up in new products introduced on to the market. More widely it is justified to state that foresight activities around Europe often have a quite simple understanding of innovation and business development. Innovation is seldom a linear process. Rather it takes place in a social environment where there is place for mistakes and sharing knowledge (Leonard & Sensiper, 1998). Innovation also relates back to the new strategic focus on network and alliances that has emerged as a consequence of the greater importance that knowledge and learning has come to play in contemporary economy. In literature it is well-described that innovation has many sources (Kline&Rosenberg, 1986; von Hippel, 1988; Leonard, 1995), that innovation is usually based less on dramatic strategic leaps than on steady more incremental innovation (Quinn, 1980, 1989; Leonard, 1995), that innovation rather builds on a combination of what is already known (Kline, 1986, Hargadon, A. 2003) and that innovation is a highly iterative and interactive process between market and R&D (Clark, 1985).

## Strategising

Strategic foresight exercises has changed from focusing on intra-organisational planning and forecasting in science and industry to put more emphasis on open and inter-organisational “strategising” with inclusion of external stakeholders in the processes. Strategising has been defined as “..those planning, resource allocation, monitoring and control practices and processes through which strategy is enacted” (Jarzabkowski & Fenton, 2006).

### Three perspectives on strategising in feat2015

In a book and two papers Mintzberg (1994) argued that strategic planning focuses too much on analyses and plans and too little in strategic thinking and strategic action. Hence, this raises the question of what the various actors understand as strategy. Mintzberg and colleagues describe 10 schools of thought in strategy formation (Mintzberg, Ahlstrand & Lampel, 1998). Another – but strongly related – issue is the understanding of decision processes. The question is whether foresight or strategy processes can be designed as a ‘decision machine’, which, if designed well enough and provided with enough information, is able to produce the right strategic decisions. Policy making based on both the innovation systems analyses and foresight exercises traditionally are based on assumption decision-making is based on rational-analytical processes. But the idea of the rational decision has been challenged for decades by decision theorists (Lindblom, 1959; March, 1988, 1994). In decision theory the traditional alternatives to rational-analytical models of decision processes are political models and anarchical models (e.g. the garbage-can and muddling-through models).

Our argument is that a more advanced understanding of regional innovation and business development on the one side and of regional strategizing on the other side will improve the impact of innovation studies and foresight exercises.

This more advanced understanding includes awareness and reflection on different rationales and perspectives on strategising and decision-making in regional decision processes. We find the following three perspectives of relevance:

- **Rational-analytical perspective.** It seems quite obvious that since the rationale for foresight stems from evolutionary economics and innovation systems, these traditions are indebted to, or at least mutually inspired by, Michael E. Porter’s strategy thinking. Porter’s book from 1980 focused on the strategic management of a firms’ external environment and on selecting a strategy to position a firm in the market. In the same way, foresight exercises and similar strategic activities aim to position national research optimally in relation to future opportunities in the strategic environment of national research programmes: that of science, technology, economy and society in general. With this understanding of strategy it is logical to use forecasting methods capable of analysing the uncertainties in the future strategic environment. This includes methods such as technology watching and trend analyses, and the use of learning curves and scenarios.
- **Learning perspective.** Whereas the Porter-inspired understanding of strategy focuses on the strategic environment, a contrasting understanding focuses on an organization’s internal resources, or on competencies and learning. This is often referred to as the resource-based view of strategy. It is based on the knowledge-based view of the firm and on organizational learning (Prahalad & Hamel, 1990; Grant, 1991). The resource-based approach does not replace analyses of an organization’s strategic environment, but supplements these by analysing internal competencies. The argument is that organizations need to understand core competencies before analysing the environment and opportunities to exploit these competencies. As competencies and knowledge are important assets, knowledge creation and learning naturally come into focus (Nonaka). In particular, Finnish and other Nordic foresight communities have analysed and utilized foresight from this perspective. In regional innovation policies making recent contributions have introduced the concept of *policy learning* (Mytelka & Smith, 2002). In

this perspective the focus in regional innovation policy is less on achieving goals or visions produced through a foresight process. Focus is more on knowledge creation, knowledge sharing and learning by the various actors during the process and the introduction of policies for learning instead of policies for achieving goals.

- Powers and interests perspective. As already mentioned, the idea of the rational decision has been challenged for decades by decision theorists. Decision-making in organizations is often a result of political negotiation between different interests or powers. Mintzberg and colleagues label this 'strategy formulation as a process of negotiation'. This element is partly present and the emphasis is on participatory processes and societal dialogue. The methods used in this approach to strategy formulation are, among others, stakeholder analyses, networks, negotiations, political games, alliances and power bases in expertise (e.g. in actual, regionally based growth oriented firms). In the archetypal version of this understanding of strategy regional innovation policies come about after negotiations between regional stakeholders and each stakeholder hopes to achieve their goals as a result of the negotiations. It is obvious that such elements are present in all foresight and strategy processes. In many contexts political interests are as legitimate as 'neutral' expectations about future developments.

## Questions for reflection and discussion

Keeping our goal in mind, i.e. development of a future oriented regional strategy model, we will invite to reflection and discussion on theoretical and practical implications of the above described perspectives on strategy and strategising.

- 1) *Motivation: The pivotal point of our project is food and agricultural production at the sectoral level with special emphasis on addressing innovation patterns, scenarios for external overall frame conditions and policy instruments. In our considerations we draw on very different theoretical traditions: industrial economics, foresight, decision theory, strategic management, and partly governance.*
  - Question: What are the benefits and pitfalls in this approach?
- 2) *Motivation: We have pointed at the three perspectives for strategising at regional level. The rational-analytical approach and the learning approach are both 'ideal' or normative approaches whereas the powers and interests perspective is a descriptive approach.*
  - Question: How can we deal with this difference? Is it fruitful to examine the three mentioned alternatives for strategising?

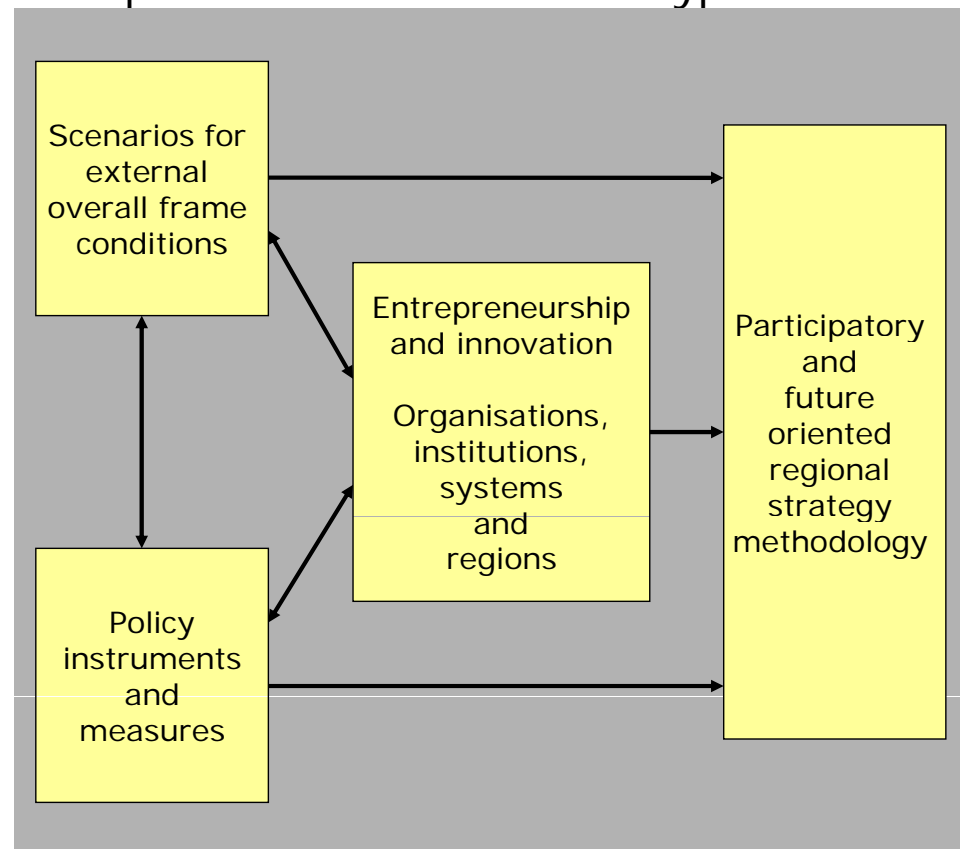
# Strategising in a regional innovation system perspective

*Linking regional foresight and regional innovation systems*

Presentation at SAP meeting 26 September 2008  
*Per Dannemand Andersen and Birgitte Rasmussen*  
*DTU Management Engineering*

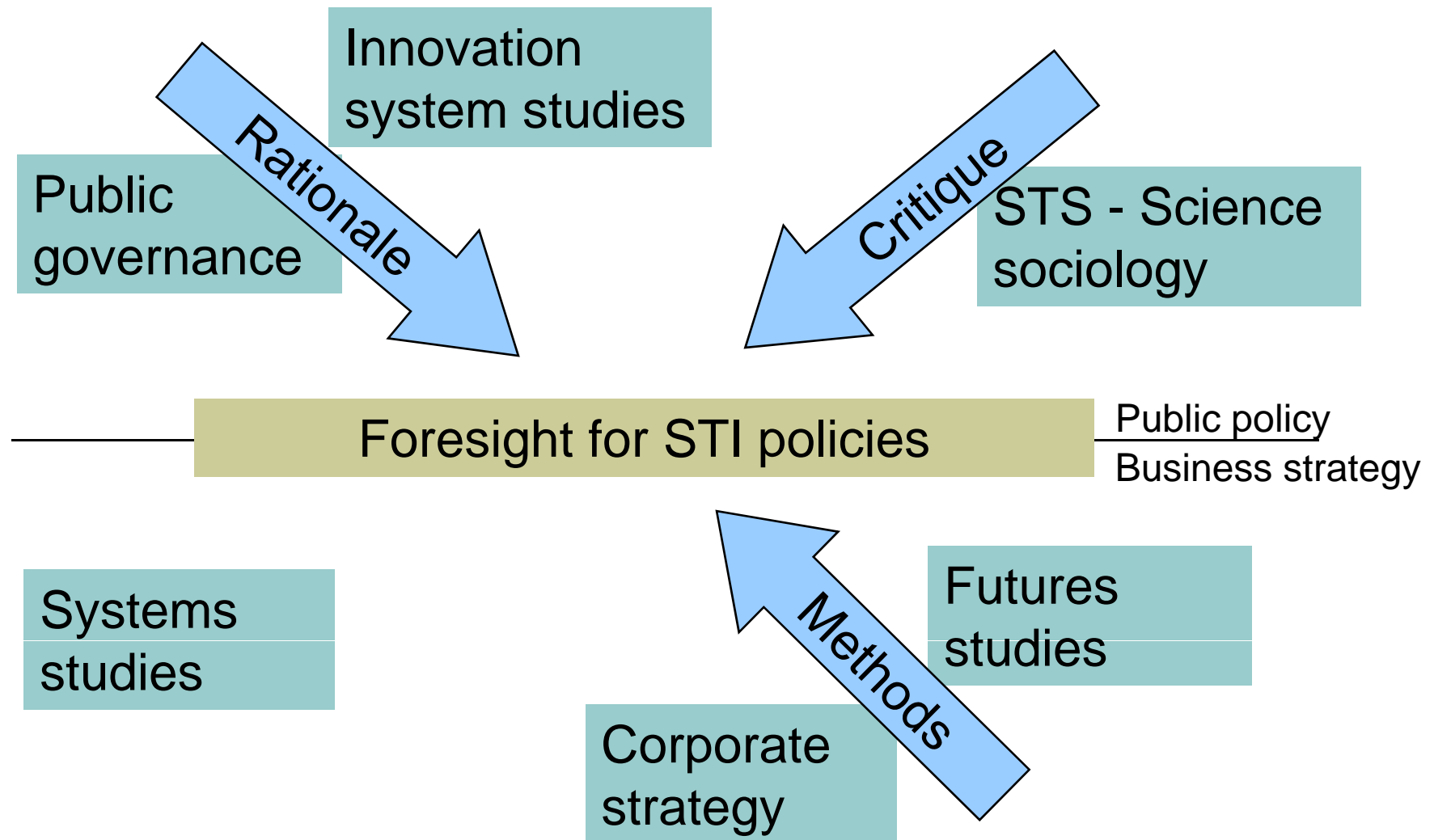
# Special feature of feat2015

- Genuinely cross disciplinary project. Draws two academic traditions:
  - regional innovation systems (RIS)
  - regional foresight (RF)
- Policy/instrument oriented: includes experiences from different types of policy measures and instruments





# Foresight is a field of practice - drawing on many disciplines





# Regional foresight and strategising

- Over recent decades foresight exercises has changed
  - from: intra-organisational planning and forecasting in science and industry
  - to: more open and inter-organisational “strategising” with inclusion of external stakeholders in the processes.
- Strategising is “*..those planning, resource allocation, monitoring and control practices and processes through which strategy is enacted*” (Jarzabkowski & Fenton).
- Regional foresight is “*the implementation of anticipation, participation, networking, vision & action at a reduced territorial scale, where proximity factors become determinant*” (FOREN/Gavigan et al).

# Foresight exercises

- Foresight exercises tends to have
  - a weak understanding of the innovation system in which the process is expected to provide policy input
  - a weak understanding of real political decision processes
- The latter might also be valid for innovation system studies

# Innovation systems and foresight

- National Innovation Systems
  - Freeman, Lundvall, Edquist, Archibugi
- National Foresight
  - e.g. Japan, German and UK
  - Martin&Irvine, Grupp&Linstone, Georghiou
- Regional Innovation Systems
  - Asheim, Cooke, Braczyk, Maskell
- Regional Foresight
  - e.g. Catalonia, West Midlands
  - Gavigan et al, Keenan et al, Gertler&Wolfe
- Sectorial Innovation Systems
  - Malerba,
- Sectorial Foresight (clusters?)
  - e.g. pharmaceuticals, agriculture
- Technology specific Innovation Systems
  - Jacobsson&Bergek, Hekkert
- Technology Foresight
  - Kahn&Wiener, Helmer, Jantsch, Martino
  - e.g. nanotechnology

# FEAT2015

- National Innovation Systems  
Freeman, Lundvall, Edquist, Archibugi
- National Foresight
  - e.g. Japan, German and UK
  - Martin&Irvine, Grupp&Linstone, Georghiou
- **Regional Innovation Systems**  
Asheim, Cooke, Braczyk, Maskell
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  - e.g. Catalonia, West Midlands
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- Technology Foresight
  - Kahn&Wiener, Helmer, Jantsch, Martino
  - e.g. nanotechnology

# Advanced understanding of strategising and decision-making in regional decision processes

- Alternative understandings of foresight and strategising (Mintzberg):
  - Foresight and strategy as environment scanning (e.g. Porter)
  - Foresight and strategy as learning (e.g. Nonaka)
  - Foresight and strategy as negotiations (e.g. Pfeffer&Salancik)
- Alternative understandings of decision processes (March):
  - Rational-analytical models
  - Anarchical models (muddling through, logical incrementalism, garbage can) (e.g. Lindblom, Quinn, March&Olson)
  - Political models (powers) (e.g. Cyert&March)

### 3 perspectives on strategising in feat2015

- A more advanced understanding includes awareness and reflection on different rationales and perspectives on strategising and decision-making in regional decision processes. We find the following three perspectives of relevance:
  - **Rational-analytical perspective**
    - focus on the external environment and on selecting a strategy to position a firm (or institution) in this environment (the market)
  - **Learning perspective**
    - focus on the organization's internal resources, competencies and learning; policy learning
  - **Powers and interests perspective**
    - focus is on stakeholder analyses, networks, negotiations, political games, alliances and power bases; participatory processes and societal dialogue

# Scientific Question 1

- *Motivation: The pivotal point of our project is food and agricultural production at the sectoral level with special emphasis on addressing innovation patterns, scenarios for external overall frame conditions and policy instruments. In our considerations we draw on very different theoretical traditions:*
  - *industrial economics*
  - *foresight*
  - *decision theory*
  - *strategic management*
  - *and partly governance*

**Question: What are the benefits and pitfalls in this approach?**



## Scientific Question 2

- *Motivation: We have pointed at the three perspectives for strategising at regional level.*
  - *Two 'ideal' or normative perspectives:*
    - *The rational-analytical perspective*
    - *The learning perspective*
  - *One descriptive perspective*
    - *The powers and interests perspective*
- Question: How can we deal with this difference? Is it fruitful to examine the three mentioned alternatives for strategising?